



# Department of Toxic Substances Control

SFUND RECORDS CTR  
2146684



Winston H. Hickox  
Agency Secretary  
California Environmental  
Protection Agency

Edwin F. Lowry, Director  
1001 "I" Street, 25<sup>th</sup> Floor  
P.O. Box 806  
Sacramento, California 95812-0806

Gray Davis  
Governor

October 21, 2002

Ms. Marie Lacey  
Environmental Protection Agency  
75 Hawthorne Street, MC SFD74  
San Francisco, CA 94105

Dear Ms. Lacey:

Subject: Contract Number: 99-T1869 Amendment 2

The enclosed amendment has been approved by the State and should be retained as your record of this agreement.

If you have any questions, please contact me at (916) 323-7918.

Sincerely,

Kathy Benson  
Contract Analyst

Attachment

cc: Chris Sherman  
Department of Toxic Substances Control

# FULLY EXECUTED

AGREEMENT NUMBER IC-200227	AMENDMENT NUMBER 2
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1. This Agreement is entered into between the State Agency and the Contractor named below

STATE AGENCY'S NAME

Department of Toxic Substances Control

CONTRACTOR'S NAME

U.S. Environmental Protection Agency

2. The term of this

Agreement is:

November 07, 2000 through

September 30, 2005

3. The maximum amount

\$189,616.00

of this Agreement is:

Amended Amount: \$1,304.00

4. The parties agree to this amendment as follows. All actions noted below are by this reference made a part of the Agreement and incorporated herein:

EXTEND the amended termination date from September 30, 2002 to September 30, 2005.

INCREASE dollar amount by \$1,304.00 from an amended amount not to exceed \$188,312.00 to a further amended amount not to exceed \$189,616.00.

A revised Statement of Work, Appendix A and Appendix C are attached and by this reference made a part hereof.

All other terms and conditions shall remain the same.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

<b>CONTRACTOR</b>		CALIFORNIA <b>Department of General Services</b> Use Only
CONTRACTOR'S NAME (If other than an individual, state whether a corporation, partnership, etc.)		
U.S. Environmental Protection Agency		
BY (Authorized Signature)	DATE SIGNED (Do not type)	
<b>SEE ATTACHED SIGNATURE PAGE</b>		
PRINTED NAME AND TITLE OF PERSON SIGNING		
John Kemmerer Chief		
ADDRESS		
75 Hawthorne Stree, SFD-8-B San Francisco, CA 94105		
<b>STATE OF CALIFORNIA</b>		
AGENCY NAME		
Department of Toxic Substances Control		
BY (Authorized Signature)	DATE SIGNED (Do not type)	
<b>SEE ATTACHED SIGNATURE PAGE</b>		
PRINTED NAME AND TITLE OF PERSON SIGNING		
Sandra Poindexter Chief, Business Services		
ADDRESS		
P.O. Box 806 Sacramento, CA 95812-0806		
		<input type="checkbox"/> Exempt Per _____

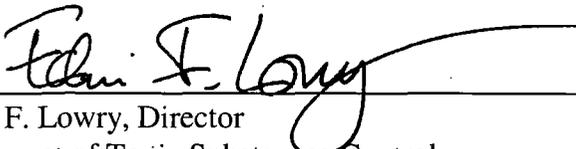
In witness whereof, the parties hereto have executed this contract amendment.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

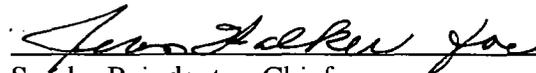


John Kemmerer, Chief  
Superfund Site Cleanup Branch  
US Environmental Protection Agency, Region IX

STATE OF CALIFORNIA



Edwin F. Lowry, Director  
Department of Toxic Substances Control  
California Environmental Protection Agency

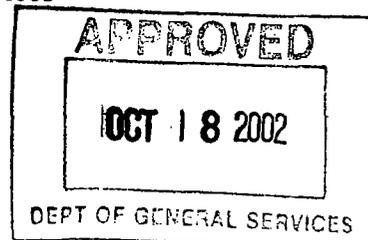


Sandra Poindexter, Chief  
Office of Business Services  
Department of Toxic Substances Control  
California Environmental Protection Agency



Department of General Services

Use Only



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AMENDMENT #2  
STATE SUPERFUND CONTRACT  
SURFACE WATER-SEDIMENT OPERABLE UNIT  
at the  
McCORMICK & BAXTER SUPERFUND SITE  
between  
THE STATE OF CALIFORNIA AND  
THE ENVIRONMENTAL PROTECTION AGENCY

This State Superfund Contract Amendment #2 amends the State Superfund Agreement #2 signed by the Environmental Protection Agency, by the California Department of Toxic Substances Control and approved by the California Department of General Services on November 7, 2000. The Statement of Work has been replaced with Revised Statement of Work, which is attached and made a part hereof as Appendix A. The Revised Statement of Work is a site-specific Statement of Work ("SOW") that indicates changes to the tasks to be performed for this Remedial Action and includes revised estimated costs. The Operation and Maintenance Plan ("O&M Plan") is attached and made a part hereof as Appendix C.

Section 4, first paragraph, in the State Superfund Contract is replaced with the following:

This Contract shall become effective upon execution by EPA and the State, and approval by the California Department of General Services, and shall remain in effect until the parties determine that the Remedial Action as described in the SOW are complete or that the final reconciliation of the Remedial Action costs has been satisfied, whichever is longer, but not longer than September 30, 2005; notwithstanding the foregoing, operation and maintenance assurance required by Section 104(c)(3)(A) of CERCLA, as set forth in Paragraph 23 hereof, shall remain in effect for the expected life of such actions. EPA and the State may extend the duration of this Contract by amendment pursuant to Paragraph 31 below if additional time is needed to complete the Remedial Action, close out the Remedial Action, or reconcile costs.

Section 5.B, in the State Superfund Contract is replaced with the following:

The State's designated State Remedial Project Manager ("SRPM") for this Contract is:

Christopher Sherman  
8800 Cal Center Drive, Suite 3  
Sacramento, California 95826-3200  
Telephone: (916) 255-3706  
Facsimile: (916) 255-3696

The State may change its designated SRPM by letter to the EPA signatories without amending this Contract. Such notice shall be deemed to incorporate such change into this Contract.

Section 9, first sentence, in the State Superfund Contract is replaced with the following:

The anticipated date for awarding the contract for the first phase of Remedial Action work at the Site is September 2002.

Section 16.A, first paragraph, in the State Superfund Contract is replaced with the following:

The estimated cost of the construction for Phase I of the Remedial Action ("Construction Costs") excluding EPA's indirect and intramural costs is One Million, Eight-Hundred Ninety-Six Thousand, One-Hundred Sixty-Two Dollars (\$1,896,162). This estimate is derived from the ROD and design specifications and includes contingencies for change orders and construction management services. Based on the foregoing, the State's cost share of Construction Costs for Phase I is estimated to be One Hundred Eighty-Nine Thousand, Six-Hundred Sixteen Dollars (\$189,616). Within six (6) months following the date on which the EPA has provided written notice to the State that EPA has accepted the completed construction activities for the Remedial Action from the construction contractor pursuant to Paragraph 24.D, EPA shall submit to the State an updated estimate of the cost of the operation and maintenance of the Remedial Action.

Section 16.B.i, in the State Superfund Contract is replaced with the following:

i. On or before February 28 of each year of this Contract, EPA shall submit to the State an invoice for the State's ten percent (10%) cost share for such portion of the work identified in the SOW as was completed during the applicable billing period.

The invoice shall be submitted in duplicate (original plus one copy) to the following, with a copy also to the SRPM identified in paragraph 5.B.:

Chief of Contracts and Office Services  
California Department of Toxic Substances Control  
P.O. Box 806,  
Sacramento California 95812-0806.

Each invoice shall be accompanied by a cost summary which indicates the name of the site, the billing period, the general contractor that performed the work during such billing period, the identification number assigned to the general contractor, and the total costs incurred during the period for which EPA is billing the State ("Cost Summary"). EPA shall also provide, as available, invoices and supporting documentation which are

furnished to EPA by the contracting agent and prime contractor performing the work described in the SOW ("Contractor Documentation"). The EPA RPM may furnish the Contractor Documentation to the State RPM during the course of the project, and if so, EPA shall be deemed to have satisfied its obligations under this Paragraph. The Cost Summary and Contractor Documentation hereinafter shall be referred to collectively as the "Cost Documentation." The State shall pay the amount requested by such invoice within sixty (60) days following actual receipt thereof, provided, that if the State receives such invoice prior to February 28, the State shall pay the amount requested by such invoice on or before April 30. The State assures payment of its cost share obligation for actual Remedial Action costs at the Site, which shall be settled at reconciliation pursuant to Paragraph 32 below, and which shall not exceed One Hundred Eighty-Nine Thousand, Six-Hundred Sixteen Dollars (\$189,616) for the Phase I construction. The State acknowledges that such assurance may require the State to seek additional appropriations to cover the work outlined in the SOW; provided, however, that the State's cost share obligation may only be increased above the estimated cost set forth in Paragraph 16(a) by an amendment to this Contract. The State shall use its best efforts to obtain authorization of funds necessary to meet its assurance to pay its cost share obligation for actual costs of the remedial action at the Site in accordance with State law; notwithstanding the foregoing, nothing contained herein shall be interpreted as a commitment to appropriate, obligate or pay funds in contravention of State law.

All other terms and provisions shall remain unchanged.

APPENDIX A

McCORMICK & BAXTER SUPERFUND SITE  
Stockton, California  
Surface Water-Sediment Operable Unit

STATEMENT OF WORK  
FOR  
STATE SUPERFUND CONTRACT AMENDMENT #2

1.0 INTRODUCTION

This statement of work describes activities to be accomplished for the Surface Water-Sediment Operable Unit ("O.U.") at the McCormick and Baxter Superfund Site (the "Site" or the "M&B Site") on behalf of the United States Environmental Protection Agency, Region IX ("EPA"), under this State Superfund Contract Amendment. The activities are derived from the Record of Decision ("ROD") dated March 31, 1999.

2.0 BACKGROUND

2.1 Site Location and Description

McCormick & Baxter Creosoting Company  
1214 West Washington Street  
Stockton, California  
EPA ID # CAD0099106527

McCormick and Baxter Creosoting Company operated a wood treating company at the Site from 1946 until 1991, when the company ceased operations.

Various wood preservation processes were used at the M&B Site during its operational history. Chemical preservatives used at the Site contained creosote, pentachlorophenol (PCP), arsenic, chromium, copper and zinc. Solvents or carriers for these preservatives reportedly included petroleum-based fuels such as fuel oil kerosene and diesel; butane; and ether.

Most treatment processes used at the Site consisted of pressure impregnation of the preservative solutions in retorts located in the central portion of the Site. Pressure treated wood was removed from the retorts and allowed to dry in storage areas throughout the Site. For a brief period of time pole ends were also dipped in an oil-PCP mixture at the butt tank area, located south of the main processing area. Waste preservative was stored in oily waste ponds in the northwestern portion of the Site adjacent to Old Mormon Slough from 1942 until 1981.

Site drainage was uncontrolled until 1978. Stormwater from all areas of the M&B Site discharged directly into Old Mormon Slough (from the early 1940's until approximately 1976) and from a portion of the M&B Site into New Mormon Slough.

## 2.2 Site Contamination

The chemicals of concern (COCs) identified for the M&B Site are PCP, carcinogenic polynuclear aromatic hydrocarbons ("cPAHs"), arsenic, dioxins/furans and naphthalene. Dioxins/furans are believed to have originated as manufacturing impurities contained in the PCP solutions. Although relatively non-toxic, naphthalene is included as a COC because it is widely distributed throughout soil and groundwater at the Site in relatively high concentrations and it serves as an indicator for the presence of non-carcinogenic PAHs ("ncPAHs").

In general, the highest concentrations of COCs in Site soils are present in the western portion of the Site, mainly the former main processing area, the Cellon processing area, the oily waste pond area and the track pit. In the eastern portion of the Site, which was used for storage of treated and untreated wood, COCs are present at lower concentrations and are primarily found in shallow soils.

Groundwater contamination at the Site is limited to semi-volatile organic compounds (SVOCs) and, to a lesser extent, dioxin. Groundwater contamination above maximum contaminant levels (MCLs) has not been detected beyond the Site fence line. However, naphthalene, for which there is no MCL, has been detected beyond the Site fence line at levels exceeding its Region 9 Preliminary Remediation Goal (PRG).

Sediment contamination related to the M&B Site appears to be limited to Old Mormon Slough, which is located directly adjacent to the M&B facility. The primary COCs identified in sediments are PAHs and dioxin; PCP was not widely distributed. Concentrations of cPAHs, ncPAHs and dioxin were elevated in Old Mormon Slough sediments relative to a Stockton Channel reference location and a site-specific cleanup level based on ecological risk. Sediment contamination appears to be generally limited to 8 feet below the mudline.

## 2.3 Surface Water-Sediment O.U.

Remedial goals for the Surface Water-Sediment O.U. are to reduce potential risks to human health from the consumption of fish contaminated with Site-related COCs; to prevent humans and aquatic organisms from direct contact with sediment having contaminants in excess of risk-based concentrations or that have been shown to be toxic to aquatic organisms; to prevent or minimize the migration of contaminants from Old Mormon Slough sediments into the surface water column; and to prevent or minimize the migration of contaminants from Old Mormon Slough sediments to groundwater.

EPA set the following cleanup standards for sediment at the M&B Site: 21 ng/kg for dioxin and 333 mg/kg for total PAHs.

## 2.4 Site-Work Previously Performed

EPA conducted several phases of removal actions to stabilize Site conditions, improve Site security, and demolish and dispose of aboveground structures and equipment. EPA addressed contaminant releases into Old Mormon Slough by installing a sheet piling wall along the southwestern shoreline of Old Mormon Slough to control oily seepages from the former oily

waste ponds area. EPA also excavated approximately 12,000 cubic yards (cy) of contaminated soil from the pond area and contained the excavated soil in a lined repository in the central portion of the Site. EPA then covered the central processing area with an asphalt cap.

### 3.0 WORK TO BE PERFORMED

This State Superfund Contract is for remedial actions related to the Surface Water-Sediment O.U. sediment cap, in addition to construction management and support services. This Statement of Work for the State Superfund Contract Amendment 2 updates the design tasks and cost estimate.

The following is an outline of the tasks that will take place during the remedial action. The remediation activities will be conducted in two separate phases. Phase I will primarily involve bank stabilization; this phase is expected to take place from the end of September 2002 to December 2002. Phase II will include capping of contaminated materials in Old Mormon Slough and installation of permanent access restrictions; this phase is expected to take place from July 2003 to December 2003.

The list includes site preparation and bank protection actions that are needed to address potentially contaminated bank material on the McCormick & Baxter property. If not removed, this material could slump into the slough and potentially recontaminate the cap at levels exceeding the sediment cleanup levels listed above. Changes to the initial design include: 1) expanded site preparation actions to remove concrete debris, vegetation and soil from a larger portion of the bank and 2) expanded bank preparation actions, including building up a two-foot berm along the bank with clean material to prevent runoff into the slough.

## Tasks To Be Performed

### Phase I

#### Remedial Action Management Plan

- Work Plans
- Sampling and Analysis Plan

#### Mobilization/Demobilization

#### Site Preparation

- Development of haul road and stockpile area
- Fence removal
- Pilings removal
- Bank debris concrete removal
- Material stockpiling
- Clearing and grubbing
- Removal of trees on embankment
- Temporary fence installation
- Temporary silt curtains piling installation

#### Temporary Silt Curtains

#### Water Quality Sampling

#### Laboratory Analysis

#### Construction Surveys

- Surface surveys
- Bathymetric surveys

#### Bank Protection

- Excavation, layback and grading
- Stone and geotextile placement
- Concrete disposal
- Erosion control seeding

#### USACE Oversight

### Phase II

#### Remedial Action Management Plan

- Work Plans
- Sampling and Analysis Plan

#### Mobilization/Demobilization

#### Site Preparation

- Maintenance of haul road and stockpile area
- Clear channel debris

#### Temporary Silt Curtains

#### Water Quality Sampling

#### Laboratory Analysis

#### Construction Bathymetric Surveys

#### Borrow Source Preparation

#### Cap Placement

#### Permanent Fence

#### Permanent Log Boom

#### Project Closeout Report

#### USACE Oversight

One-Year O&M

Log Boom/Sign Maintenance

Sampling and Analysis

Bathymetric Survey

O&M Manual

USACE Oversight

Cost Estimate by Phase

<b>Phase I - Bank Stabilization:</b>	
Remedial Action Management Plan	\$ 53,493.00
Site Mobilization/Demobilization	330,519.00
Haul Road and Stockpile Area	93,224.00
Temporary Silt Curtains	60,731.00
Silt Curtain Piling Installation	9,807.00
Remove Inner Channel Debris/Clear & Grub	166,525.00
Bank Excavation	88,162.00
Bank Excavation over 8200 Tons	5,602.00
Pit Run Cushion	57,837.00
Geotextile Blanket	13,114.00
Shoreline Berm	29,445.00
Riprap	217,117.00
Riprap over 5500 Tons	26,144.00
Bituminous Dust Control Coating	2,513.00
Water Quality Sampling (Regime 1)	69,960.00
Water Quality Sampling (Regime 2)	29,270.00
All Other Base Work (Permanent Markers; Maintenance & Repair - Fence; Log Boom, Air Monitoring; Engineering Support; Bathymetry Survey; Surface Survey; Navigational Controls)	256,130.00
Project Management/Field Oversight	236,337.00
 Subtotal	 1,745,930.00
USACE S&A (Supervision & Admin.) + EDC (Engineering During Construction)	150,232.00
<b>Phase I Total</b>	<b>\$ 1,896,162.00</b>
<b>Phase II - Sediment Cap:</b>	
Remedial Action Management Plan	\$ 54,718.00
Site Mobilization/Demobilization	282,262.00
Haul Road/Stockpile Area	6,508.00
Temporary Silt Curtains	25,844.00
Clear Inner Channel Debris	32,448.00
Borrow Source Preparation	14,154.00
Sediment Cap	1,112,489.00
Sediment Cap over 36,400 cy	170,842.00
Permanent Log Boom	12,539.00
Chain Link Fence	47,704.00
Project Closeout Report	87,375.00
Water Quality Sampling (Regime 1)	70,572.00
Water Quality Sampling (Regime 2)	29,500.00
All Other Base Work (Maintenance & Repair - Fence; Log Boom, Air Monitoring; Engineering Support; Bathymetry Survey; Surface Survey; Navigational Controls)	148,288.00
Project Management/Field Oversight	241,994.00
 Total USACE 1-Year O&M (O&M Manual, Log Boom Maint., Sampling)	 35,653.00
 Subtotal	 2,372,890.00
USACE S&A + EDC	150,232.00
<b>Phase II Total</b>	<b>\$ 2,523,122.00</b>
<b>PROJECT TOTAL</b>	<b>\$ 4,419,284.00</b>

## 5.0 OPERATION AND MAINTENANCE PLAN

The Operation and Maintenance (O&M) Plan for the Surface Water-Sediment O.U. is provided as Attachment C. The O&M Plan describes the O&M activities to be conducted, lists the milestones for State assumption of O&M responsibilities, and provides the performance criteria that will be used to determine that the remedy is Operational & Functional (O&F). The O&M Plan will be updated to include information on the maintenance, if required, of institutional controls, once the institutional controls have been agreed upon by EPA and the State.

APPENDIX C

**Operation and Maintenance (O&M) Plan  
for  
Surface Water-Sediment Operable Unit**

McCormick & Baxter Superfund Site  
Stockton, California

February 7, 2002

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- 8.0 Institutional Controls
- 9.0 O&M Personnel Requirements
- 10.0 Equipment and Material Requirements
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## **1.0 Purpose of O&M Plan**

The purpose of this Operation and Maintenance (O&M) Plan for the McCormick & Baxter Superfund Site (M&B) sediment remedy is primarily as an administrative document to provide a general description of the O&M activities to be conducted, outline the milestones for state assumption of O&M responsibilities, and provide the criteria that will be used to determine that the remedy is Operational and Functional (O&F).

The O&M Manual, on the other hand, is primarily a technical submittal and will include a detailed description of the O&M components, schedule, personnel requirements, laboratory testing requirements, and reporting requirements, among other topics. The O&M Manual will be completed after construction has been concluded. Both documents will be prepared according to the EPA guidance, "Operation and Maintenance in the Superfund Program" (EPA-540-F-01-004, May 2001).

## **2.0 Site Background Information**

The M&B Site is located in an industrial area of Stockton, California, near the Port of Stockton and the Interstate 5/Highway 4 interchange. The former wood treatment facility borders Old Mormon Slough, which joins the Stockton Deepwater Channel on the San Joaquin River. The McCormick & Baxter company operated at the site from 1946 to 1990, when the company ceased operations. Wood treatment processes at the site used creosote, pentachlorophenol (PCP), and compounds containing chromium, copper, zinc and arsenic. As a result of site operations, soil and groundwater at the site, as well as in sediment in Old Mormon Slough, became contaminated. The primary contaminants of concern (COCs) in sediment for both human health and ecological receptors are polychlorinated dioxins and furans (PCDD/F) and polynuclear aromatic hydrocarbons (PAHs).

The M&B Site has been divided into the Soils-Groundwater Operable Unit (O.U.) and the Surface Water-Sediment O.U. The EPA Record of Decision (ROD), dated March 31, 1999, selected placement of an approximately two-foot thick sand cap in Old Mormon Slough as the remedy for contaminated sediment. The cap design addresses effective short- and long-term chemical isolation of contaminants, including possible effects of bioturbation, consolidation, erosion and other pertinent processes. Cap material will consist of clean borrow material and will be required to meet stringent acceptance criteria before placement. The cap will cover approximately 8.8 acres. The selected remedy includes the use of physical access controls and institutional controls to protect the cap. Physical access restrictions consist of a log boom and signs placed across the slough to prevent boat traffic from potentially disturbing the cap. The need for institutional controls, such as governmental and proprietary controls to protect the sediment remedy, will be determined by EPA and the State. RA will be conducted by the U.S. Army Corps of Engineers (USACE) through an interagency agreement (IAG) with EPA.

EPA and California EPA/Department of Toxic Substances Control (DTSC) signed a State Superfund Contract (SSC) (dated September 8, 1999, as amended on November 7, 2000) to document the responsibilities of EPA, as the lead agency, and DTSC, as the support agency,

during the Remedial Action (RA) and O&M for the Surface Water-Sediment O.U., as selected in the ROD. As stated in the SSC, "...EPA shall conduct activities necessary to ensure that the Remedial Action is operational and functional for a period of up to one year after construction is complete, or until EPA and the State determine that the Remedial Action is functioning properly and performing as designed, whichever is earlier."

### 3.0 Criteria for O&F Determination

Approximately one year after construction of the cap, EPA will conduct a bathymetric survey and collect three mid-channel sediment grab samples for chemical analysis. The following criteria will be used at that time to make a determination that the sediment remedy is Operational and Functional (O&F):

- 1) Cutback area and berm along southern bank are stable with no evidence of erosion
- 2) Grass stands on berm along southern bank are established
- 3) Sediment cap bathymetry acceptance criteria: Confirm minimum 2 feet over pre-construction survey in capped area of Old Mormon Slough
- 4) Sediment cap chemistry acceptance criteria: No exceedance of ROD sediment cleanup standards in capped area of Old Mormon Slough (see Table 2 below)
- 5) Access restrictions (log boom and signs) are in place and preventing boat access into Old Mormon Slough
- 6) Institutional Controls are in place

### 4.0 Milestones for State Assumption of O&M Responsibilities

Table 1 - O&M Milestones

Milestone	Planned Date
EPA/DTSC/USACE/Contractor conduct Prefinal Inspection	November 2003
USACE Contractor prepares Punchlist	November 2003
EPA/DTSC/USACE conduct Final Inspection (optional*)	December 2003
One-year "shakedown" period starts (at Final Inspection)	December 2003
Contractor prepares Cost and Performance Report	February 2004
EPA/DTSC make final determination of institutional controls as specified in SSC (required for inclusion in O&M Manual)	No later than April 2004
USACE prepares Draft O&M Manual and 30-Year O&M Cost Estimate for EPA and DTSC comment	February 2004
USACE prepares Final O&M Manual and 30-Year O&M Cost Estimate	April 2004
USACE conducts bathymetric survey and sediment sampling	September 2004
USACE prepares Final RA Report	November 2004
EPA and DTSC make O&F determination (EPA letter to DTSC)	December 2004

\* According to the O&M guidance, "when only minor problems are found, the prefinal inspection may be counted as the final inspection."

## **5.0 Description of O&M Activities**

O&M activities for the sediment remedy are expected to include the following:

- 1) Periodic visual inspection of southern bank of Old Mormon Slough (McCormick & Baxter property) to assess bank and berm for evidence of erosion
- 2) Periodic visual inspection of condition of southern bank grass stands
- 3) Periodic collection of sediment cap grab samples for chemical analysis (see Section 6.0)
- 4) Periodic bathymetric surveys of Old Mormon Slough (see Section 6.0)
- 5) Periodic visual inspection of log boom and signs in Old Mormon Slough
- 6) Repair of southern bank and berm as needed
- 7) Re-seeding of southern bank of Old Mormon Slough as needed
- 8) Replenishment of sediment cap material as needed
- 9) Replenishment of sediment cap armoring as needed
- 10) Repair and/or replacement of access restrictions (log boom and signs) as needed
- 11) Evaluation of institutional controls, if any, to determine they are in place and functioning

O&M activities and their schedule will be detailed in the O&M Manual. The manual will also provide decision criteria for conducting future actions. For example, in the event that bathymetric data or sediment chemical data indicate the integrity of the cap may be compromised, management actions could include replenishing cap materials or adding more impervious cap materials.

## **6.0 Conceptual O&M Sediment Cap Monitoring Plan**

This O&M Plan describes the Conceptual O&M Sediment Cap Monitoring Plan. The O&M Manual will provide the final O&M Sediment Cap Monitoring Plan once comments have been received from other agencies (e.g., the Regional Water Quality Control Board), and DTSC and EPA have reached agreement on the components of the monitoring. Discussions are currently underway with the National Marine Fisheries Service (NMFS) and the U.S. Fish & Wildlife Service on the value of clam and/or crayfish studies as part of the monitoring program.

### **6.1 Objectives of O&M Sediment Cap Monitoring**

Monitoring of the cap will be conducted at regular intervals to evaluate the effectiveness of the remedy in protecting human health and the environment. The overall goals of the monitoring program are to:

- 1) Confirm the structural integrity of the constructed cap (i.e., confirm that the constructed cap is physically stable, remaining in place at the desired thickness and thereby effectively isolating underlying contaminated sediments)
- 2) Confirm that ecological risk-based cleanup standards have not been exceeded in the surface cap material

3) Confirm that institutional controls and access restrictions are effective in protecting the cap from disturbance

## 6.2 Compounds, Sampling Procedures and Sampling Frequency

The O&M Sediment Cap Monitoring Program will consist of the collection of bathymetric and chemical data from the capped area of Old Mormon Slough as follows:

**Table 2 - O&M Cap Monitoring**

Compound or Attribute	Measurement or ROD Cleanup Standard	Method	Sampling Frequency*
Depth Soundings	Confirm minimum 2 ft. over preconstruction survey	Field	Year 5, 10, 20, 30
PCDD/F (3 samples)	21 ng/kg	1613B or equivalent	Year 5, 10, 20, 30
PAH, Organic Carbon Basis (3 samples)	333.3 mg/kg	8270c or equivalent	Year 5, 10, 20, 30
Total Organic Carbon (3 samples)	NA (needed for PAH calculation)	9060 modified (or equivalent)	Year 5, 10, 20, 30

\* Years following the determination of O&F

The sediment grab samples will be collected from three locations in mid-channel. The sampling is scheduled to coincide initially with the EPA 5 Year Review process and provide the data for those evaluations. If necessary, cap monitoring may be done more frequently as described under the O&M Contingency Plan.

## 7.0 FSP/QAPP and HSP

Field Sampling Plans/Quality Assurance Project Plans (FSP/QAPP) prepared by USACE and its contractor(s) for RA activities will be relevant to O&M activities and can be readily adapted by the DTSC O&M contractor. This also applies to the Health and Safety Plans (HSP) prepared by USACE and its contractors for Site Maintenance, RD and RA activities. The O&M Manual will discuss health and safety issues relevant to O&M activities.

## 8.0 Institutional Controls

As stated in the SSC, "EPA and the State shall determine the institutional controls necessary to implement the Remedial Action within six months following completion of construction of the Remedial Action." If institutional controls are determined to be necessary by EPA and DTSC for protection of the sediment cap, O&M activities related to their maintenance and enforcement will be included in the O&M Manual.

## **9.0 O&M Personnel Requirements**

The general personnel requirements for O&M activities will be for slough bank inspections; log boom inspections; bathymetric surveys; sediment grab sample collection and analysis; and data management and reporting. The O&M Manual will provide specific information on O&M staffing needs, including training and certification requirements.

## **10.0 O&M Equipment and Material Requirements**

There are no major equipment and material requirements for O&M for this remedy. Incidental equipment and material will be described in the O&M Manual.

## **11.0 O&M Contingency Plan**

The O&M Manual will provide a Contingency Plan for handling abnormal occurrences. For example, the Contingency Plan will recommend activities, such as additional bathymetric surveys outside of the normal schedule, in the event of a major seismic event or flood in the Stockton area.

## **12.0 Estimate of O&M Costs**

An estimate of 30-Year O&M costs will be prepared by the USACE and provided to DTSC once EPA and DTSC have reached agreement on the components of the O&M. The cost estimate will be included in the O&M Manual.

## **13.0 Reporting Requirements**

DTSC will provide all O&M monitoring data and inspection results to EPA, including any monitoring conducted outside of the normal schedule. A sample report format will be provided in the O&M Manual. EPA will use this data to prepare the Five Year Reviews reports.

## **14.0 Criteria for O&M Completion**

The criteria for O&M completion (i.e., conditions for O&M termination) for the sediment remedy have not been established yet by EPA and DTSC. These will be developed at a later date.

## **15.0 Site Use and Disposition of Facilities Following O&M Completion**

Because the Soil and Groundwater O.U. remedies are still to be implemented, the final use of the site is unknown. USACE is expected to be responsible for overall Site Maintenance activities (e.g., site security, fence repair, operation of the stormwater collection system) until RD/RA has been completed for the other O.U.s.

## **16.0 Access and Property Issues**

As stated in the SSC regarding State site visits during RA, "Insofar as EPA has access to the Site, representatives of the State shall have access to the Site to the same extent as EPA for the purpose of reviewing work in progress, subject to the State's compliance with the Site's safety plan. To the extent feasible, representatives of the State shall coordinate with the RPM prior to visiting the Site." The O&M Manual will outline specific procedures for coordination between the DTSC O&M contractor and the USACE Site Maintenance and Soil-Groundwater O.U. contractors.